UNIVERSITY of NICOSIA | MEDICAL SCHOOL

# Study Guide

## MPH-513: Health Protection: Safeguarding Wellbeing in Populations

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| **Institution** | University of Nicosia | | |
| **Programme of Study** | Master of Public Health | | |
| **Module** | MPH-513: Health Protection: Safeguarding Wellbeing in Populations | | |
| **Level** | Undergraduate ☐ | Postgraduate (Master) ☒ | |
| **Language of Instruction** | English | | |
| **Mode of Delivery?** | Distance Learning ☒ | Conventional ☐ | |
| **Type of Course** | Required ☒ | Elective ☐ | |
| **Number of Group Advising Meetings/Teleconferences/Lectures** | Total: 16 | With Physical Presence 0 | Online: 16 |
| **Assessment** | • Participation<br>• Assignments<br>• Exams | | |
| **Number of ECTS credits** | 5 | | |

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| Preparation of Study Guide by: | |
| Review and approval of study Guide by: | |

## i. Teaching Faculty

Dr Souzana Achilleos

## ii. Course:

**Brief description of Course and Aims**

This course aims to cover in depth the core principles of Health Protection against infectious agents and environmental hazards, particularly in the context of disasters, as well as Health Promotion for preventing disease, maintaining wellbeing and improving health in populations. The main learning objectives of the course are to enable students to:

1. Apply the principles and detailed methodologies of Health Protection to protect the public from infectious agents and environmental hazards, particularly in the context of disasters.
2. Analyse current and emerging pandemics and the global network of organizations, agencies and initiatives aiming at tackling these.

**Expected Learning Outcomes**

1. Analyse the concept of health as a human right of individuals and communities as a whole.
2. Critically evaluate the differences between the concepts of hazard, risk, and disaster.
3. Understand the basis and uses of the different disaster classifications and analyse the main characteristics of specific disasters.
4. Analyse the major infectious agents and diseases of public health importance.
5. Identify and examine the major environmental and occupational hazards of health.
6. Apply the principles of Health Protection to protect the public from infectious agents and environmental hazards (e.g. responding to individual cases of notifiable infections, such as through hygiene advice and immunisation).
7. Analyse current and emerging pandemics and the global network of organizations, agencies and initiatives aiming at tackling these.
8. Justify the role of regional, national, and global surveillance in health protection.
9. Devise an outbreak investigation plan based on the principles of infection outbreak investigation.
10. Apply all risk management steps(anticipation, assessment, prevention, preparation, response, recovery) during a major incident (e.g., infectious disease outbreaks, chemical spills).
11. Relate and contrast the procedures and structures involved in emergency response and recovery and evaluate disaster risk assessment methods and reduction strategies.

**Teaching Material**

- Weekly PowerPoint presentations
- Bibliography
  - Required
    1. Ghebrehewet S, Stewart AG, Baxter D, Shears P, Conrad D, Kliner M, Health Protection Principles and Practice , Oxford University Press (2016).
    2. Frumkin H.; Environmental Health: From Global to Local (3rd ed.), Wiley, (2016).
    3. Mastering Public Health: A Postgraduate Guide to Examinations and Revalidation (2nd ed.), Lewis G, Sheringham J, Bernal JL, Crayford T, CRC Press (2014).

  - Recommended

1. Communicable Disease Control and Health Protection Handbook (3rd ed.), Hawker J, Begg N, Blair I, Reintjes R, Weinberg J, Ekdahl K, Wiley Online Library (2012).
2. Essentials of Toxicology for Health Protection (2nd ed.), Baker D, Karalliedde L, Murray V, Maynard R, Parkinson HTN, Oxford University Press (2012).

**ECTS Credits**

Compulsory module corresponding to 5 ECTS.

**iii. Each Main Topic/Thematic Area:**

The details for each topic are provided in the respective week that follows in the given study guide.

**iv. Teaching Timetable**

| Week | Topic & objective | Readings | Study Hours required | Assessed work & WebEx meetings |
|---|---|---|---|---|
| 1 | • Analyse the concept of health as a human right of individuals and communities as a whole. | • PPT presentation: Health as a Human Right | 15 hours | Q&A Forum (Health as a Human Right) |
| 2 | • Critically evaluate the differences between the concepts of hazard, risk, and disaster.<br>• Understand the basis and uses of the different disaster classifications and analyse the main characteristics of specific disasters. | • PPT presentation: Risk and Hazards<br>• PPT presentation: Disasters | 15 hours | • Q& A forum (Hazards, Risks, and Disasters) |

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| 3 | • Analyse the major infectious agents and diseases of public health importance.<br>• Analyse and examine the major environmental and occupational hazards of health.<br>• Apply the principles of Health Protection to protect the public from infectious agents and environmental hazards (e.g. responding to individual cases of notifiable infections, such as through hygiene advice and immunisation).<br>• Analyse current and emerging pandemics and the global network of | • PPT presentation: Health Protection Part 1<br>• PPT presentation: Health Protection Part 2 | 15 hours | • Q&A Forum (**Mandatory Activity:** Identifying the factors in the health models of infections and environmental issues) | |

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| | organizations, agencies and initiatives aiming at tackling these. | | | |
| 4 | • Justify the role of regional, national, and global surveillance in health protection. | • PPT presentation: Health Protection Surveillance | 15 hours | • Webinar (Interactive case study – Surveillance)<br>• Q&A Forum (**Mandatory Activity):** Understanding and using sensitivity, specificity and predictive values) |
| 5 | • Devise an outbreak investigation plan based on the principles of infection outbreak investigation. | • Recorded lecture: Outbreak investigation | 15 hours | • Webinar (Outbreak investigation case study) |
| 6 | • Apply all steps involved in risk management (anticipation, assessment, prevention, preparation, response, recovery).<br>• Relate and contrast the procedures | • PPT presentation: Risk management & ERR | 15 hours | • Webinar Session (Response to zoonotic diseases outbreaks)<br>• Webinar Session (Exam review session) |

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| | and structures involved in emergency response and recovery and evaluate disaster risk assessment methods and reduction strategies. | | | | |
| 7 | • n/a (student revision for exams) | • n/a | 15 hours | • n/a | |

### v. Teaching methods

Teaching material including PowerPoint presentations with extended descriptions and explanations, asynchronous video presentations, additional readings (journal articles and e-books), access to additional videos and commercials related to the module, synchronous meetings (WebEx), forums, chats, quizzes, case studies and other formative and summative assessments.

### vi. Written work – Exams – Assessment

This course is assessed via a combination of summative assignments and exams.

**Written Exams**

**Final Exam:**

Students are expected to undertake a written final examination. This will be completed online using electronic invigilation software.

### vii. Communication

The following opportunities for communication are provided to students in an attempt to enhance interaction between i. Student and faculty, ii. Student and student iii. Student and content:

- Webinars
- Q&A discussion forums and chats
- Email
- Skype
- Wikis

DEPARTMENT OF PRIMARY CARE AND

POPULATION HEALTH

MASTER OF PUBLIC HEALTH (MPH)

**Study Guide**

# MPH-513: Health Protection: Safeguarding Wellbeing in Populations

Course Lead:

Dr Souzana Achilleos

## Contents

## Introductory note

This Study Guide is a basic supplement for the distance learning course MPH-513 'Health Protection: Safeguarding Wellbeing in Populations, which is offered by the distance learning Master of Public Health (MPH) programme. The broad objective of the course is to cover in depth the core principles of Health Protection against infectious agents and environmental hazards, , particularly in the context of disasters.

The aim of this Guide is to direct the students and help them into making systematic use of the educational material on which the teaching of the course is based. The Guide must be used in common with the Course Outline and with the educational material (recorded lectures, online tutorials, exercises, articles, and book chapters), as indicated for each section in the interactive e-Learning Platform of the course (Moodle). Students are advised to start their studying by the recorded course lecture for each topic, in order to take full benefit of the additional activities as listed in the current Guide and described in detail on the Moodle page of the course.

The current course includes **6 sections**. The course material will be made available on Moodle over a duration of **6 weeks,** with the addition of **1 study week** at the end of the semester. Each of these sections represents a core course topic and is composed of the following components:

- Learning Objectives and Outcomes
- Teaching Material
- Additional learning activities to complete
- Additional Support Material
- Key words

At the beginning of each study week, students are expected to familiarise themselves with the corresponding sections' objectives and learning outcomes, while they should go through the **teaching material** (recorded lectures) and conduct the **additional learning activities**. Learning activities will have a designated start and end date and time, which will be communicated to students via email. Some activities will be

synchronous (e.g. webinars, online chats), while others will be asynchronous (e.g. Q&A Fora). The former will involve direct live interaction (either chat or verbal/video) between students and tutor, as well as between students themselves (student-tutor, student-student interactions), while in the latter the aforementioned interactions will not be live. More details on learning activities are provided on Moodle (orientation week). Going through the teaching material and conducting the learning activities is essential, since it will help in clarifying and assimilating the material of the course as well as developing critical thinking on each topic.

In addition to the essential components described above, each section contains **additional support material,** comprising relevant bibliography (relevant textbooks and designated chapters), as well as relevant online resources (websites and other documents such as scientific articles) and online videos to watch. Additional support material found on Moodle is recommended for acquiring more in-depth knowledge of the relevant concepts, however these are not essential for addressing the section Learning Outcomes, nor for the relevant assessment. Students are strongly encouraged to go through these additional resources, as part of self-directed learning, which will facilitate deeper understanding and critical thinking on the topic of interest. The relevant online resources and videos could be updated and/or enriched during the semester.

All relevant resources and activities can be found on the Moodle page of the specific course. It is essential that you follow the specific Study Guide in combination with the course's Moodle page throughout the duration of the course, in order to organise your learning time efficiently and take full advantage of the learning material offered.
You will have the opportunity to revise the course material at the end of the Semester, during the examination period.

## Course Weekly Schedule

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| **Week 1** | |
| Section 1 | Health as a human right |
| **Week 2** | |
| Section 2 | Environmental Hazards, Risks and Disasters |
| **Week 3** | |
| Section 3 | Principles and purpose of Health Protection |
| **Week 4** | |
| Section 4 | Health Protection Surveillance |
| **Week 5** | |
| Section 5 | Major features of an infection outbreak and methods of investigation and control |
| **Week 6** | |
| Section 6 | Risk Management, Emergency response and Recovery |
| **Week 7 (end of semester)** | |
| Study Week | |

## Section 1 – Health as a human right

### Learning Objectives and Outcomes

**Objectives**

The specific section aims to provide an overview and historical perspective of the concept of 'Health' as a human right of individuals and populations.

**Expected Learning Outcomes**

After the completion of this section, the students are expected to:

1. Analyse the concept of health as a human right of individuals and communities as a whole.

### Teaching Material

**Recorded Lectures**

- Recorded PowerPoint presentation: Health as a Human Right

**Additional learning activities to complete**

- Q&A Forum (Health as a Human Right)

**Description:** Students are asked to use the section's material to answer a true or false quiz. Students are expected to demonstrate critical thinking in the meaning of the term 'health' and the concept of health as a human right.

### Additional Support Material

**Websites and Other relevant resources**

- WHO - Health and human rights (http://www.who.int/mediacentre/factsheets/fs323/en/)
- Office of the United Nations High Commissioner for Human Rights - Publications on Human Rights(https://www.ohchr.org/en/publications?field_content_category_target_id[169]=169&created[min]=&created[max]=&sort_bef_combine=field_published_date_value_DESC&page=0)

- Nampewo Z, Mike JH & Wolff J. Respecting, protecting and fulfilling the human right to health. *Int J Equity Health.* 2022*;* 21(36). (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8922072/pdf/12939_2022_Article_1634.pdf)

**Online videos**

- WHO - Health is a human right (https://youtu.be/yU9_V96MOF0)
- Human Rights Watch - What is the right to health? (https://youtu.be/oSvAcZMNAQI)

**Expected study time:** 13 hours

**Key words**

Health, Human Rights.

## Section 2 – Environmental Hazards, Risks, and Disasters

### Learning Objectives and Outcomes

**Objectives**

The specific section aims to introduce the concepts 'hazard', 'risk', and 'disaster' in the context of health protection and health promotion.

**Expected Learning Outcomes**

After the completion of this section, the students are expected to:

2. Critically evaluate the differences between the concepts of hazard, risk, and disaster.
3. Understand the basis and uses of the different disaster classifications and analyse the main characteristics of specific disasters.

### Teaching Material

**Recorded Lectures**

- Recorded PowerPoint presentation: Risk and Hazards
- Recorded PowerPoint presentation: Disasters

### Additional learning activities to complete

• Q&A forum (Hazards, Risks, and Disasters) Description: For this activity students are first expected to familiarize themselves with the concept of risk and hazard and their differences, and the types and consequences of disasters. Then, in the Q&A forum, they are asked to answer a series of single-best answer questions.

### Additional Support Material

**Bibliography**

- Ghebrehewet S, Stewart AG, Baxter D, Shears P, Conrad D, Kliner M. ; Health Protection Principles and Practice, Oxford University Press (2016), Chapter 17.
    - *Permalink for e-book:*

http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,sso&db=nlebk&AN=1406327&site=eds-live&custid=s1098328&ebv=EB&ppid=pp_Cover

- Lewis G, Sheringham J, Bernal JL. Crayford T.; Mastering Public Health: A Postgraduate Guide to Examinations and Revalidation, (2nd ed.), CRC Press (2014), Chapter 2F.
    - *Permalink for e-book:*

http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,sso&db=nlebk&AN=1763530&site=eds-live&custid=s1098328&ebv=EB&ppid=pp_A

- Frumkin H.; Environmental Health: From Global to Local (3rd ed.), Wiley, (2016), Chapter 24.
    - *Permalink for e-book:*

https://ebookcentral.proquest.com/lib/nicosia/detail.action?docID=7104323

**Websites and Other relevant resources**

- HealthKnowledge - Risk and hazard (https://www.healthknowledge.org.uk/public-health-textbook/disease-causation-diagnostic/2f-environment/risk-hazard)
- Toxicology Education Foundation - Hazard vs Risk (http://toxedfoundation.org/hazard-vs-risk/)
- Canadian Center for Occupational Health and Safety - Hazard and Risk (https://www.ccohs.ca/oshanswers/hsprograms/hazard_risk.html)
- Irish Health and Safety Authority - Hazard and Risk (http://www.hsa.ie/eng/Topics/Hazards/)
- Australian Workplace Safety & Occupational Rehabilitation Services - What Is The Difference Between The Terms “Hazard” And “Risk”? (http://blog.rrp.com.au/blog/what-is-the-difference-between-the-terms-hazard-and-risk)
- International Chemical Secretariat (Hazard vs. Risk – What is best practice when assessing chemicals? (http://chemsec.org/hazard-vs-risk-what-is-best-practice-when-assessing-chemicals/)
- UN Office for Disaster Risk Reduction (UNDRR) Prevention Web - Understanding Disaster Risk (https://www.preventionweb.net/understanding-disaster-risk )
- Disasters in numbers 2021. Centre for Research on the Epidemiology of Disasters (CRED) (2022) (https://www.preventionweb.net/quick/71071)

**Online videos**

- Hazard and Risk – What's the difference? (https://youtu.be/_GwVTdsnN1E)
- GFDRR - Understanding Disaster Risk (https://youtu.be/O-SWl3J1aQc)

**Expected study time:** 13 hours

**Key words**

Risks, Hazards, Environmental Disasters, Health Protection, Health Promotion.

## Section 3 – Principles and purpose of Health Protection

### Learning Objectives and Outcomes

**Objectives**

The specific section aims to introduce and analyse the concept of Health Protection and how it relates to protecting the public from infectious agents, environmental and occupational hazards.

**Expected Learning Outcomes**

After the completion of this section, the students are expected to:

4. Analyse the major infectious agents and diseases of public health importance.
5. Identify and examine the major environmental and occupational hazards of health.
6. Apply the principles of Health Protection to protect the public from infectious agents and environmental hazards (e.g. responding to individual cases of notifiable infections, such as through hygiene advice and immunisation).
7. Analyse current and emerging pandemics and the global network of organizations, agencies and initiatives aiming at tackling these.

### Teaching Material

**Recorded Lectures**

- Recorded PowerPoint presentation: Health Protection Part 1
- Recorded PowerPoint presentation: Health Protection Part 2

### Additional learning activities to complete

- Q&A Forum (**Mandatory Activity:** Identifying the factors in the health models of infections and environmental issues)

**Description:** Students are presented with examples of the agent-host-environment and the source-pathway-receptor models, and are asked to identify the appropriate component of the model for each example. Students are expected to demonstrate

critical thinking in identifying the elements of the pathway that make an agent or source a risk to human health.

## Additional Support Material

**Bibliography**


- Ghebrehewet S, Stewart AG, Baxter D, Shears P, Conrad D, Kliner M. ; Health Protection Principles and Practice, Oxford University Press (2016) Chapters 1-12, 14-17, 26, 27, 29.
    - *Permalink for e-book:*

http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,sso&db=nlebk&AN=1406327&site=eds-live&custid=s1098328&ebv=EB&ppid=pp_Cover

- Lewis G, Sheringham J, Bernal JL. Crayford T.; Mastering Public Health: A Postgraduate Guide to Examinations and Revalidation, (2nd ed.), CRC Press (2014), Chapters 2F, 2G. 1 & 2G.7
    - *Permalink for e-book:*

http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,sso&db=nlebk&AN=1763530&site=eds-live&custid=s1098328&ebv=EB&ppid=pp_A


**Websites and Other relevant resources**

- US Health Protection Service - Health Protection (http://www.publichealth.hscni.net/directorate-public-health/health-protection)
- CDC - Global Health Protection and Security (https://www.cdc.gov/globalhealth/healthprotection/index.html)
- GOV.UK – Infectious diseases (https://www.gov.uk/topic/health-protection/infectious-diseases)
- NHS Education for Scotland - Blood Borne Viruses and Sexual Health (http://www.nes.scot.nhs.uk/education-and-training/by-theme-initiative/public-health/health-protection/blood-borne-viruses-and-sexual-health.aspx)
- Estimating environmental health impacts (https://www.who.int/activities/environmental-health-impacts)
- Rojas-Rueda D, Morales-Zamora E, Alsufyani WA, Herbst CH, AlBalawi SM, Alsukait R, Alomran M. Environmental Risk Factors and Health: An Umbrella

Review of Meta-Analyses. *International journal of environmental research and public health*.2021; *18*(2). (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7830944/pdf/ijerph-18-00704.pdf)

**Expected study time:** 13 hours

**Key words**

Health Protection, Environmental Hazards, Occupational Hazards, Infectious Agents, Outbreak, Control.

## Section 4 – Health Protection Surveillance

### Learning Objectives and Outcomes

**Objectives**

The specific section aims to cover and explain in detail regional, national, and global health protection surveillance.

**Expected Learning Outcomes**

After the completion of this section, the students are expected to:

8. Justify the role of regional, national, and global surveillance in health protection.

### Teaching Material

**Recorded Lectures**

- Recorded PowerPoint presentation: Health Protection Surveillance

### Additional learning activities to complete

- Webinar Session (Interactive case study – Surveillance)

**Description:** Students are required to apply the knowledge gained from the section's material on real life case and surveillance scenaria. Students will be expected to approach problem solving with critical thinking as to choose the most appropriate type of health surveillance, the information and data that needs to be collected, data analysis steps, and the interpretation of the data.

- Q&A Forum (**Mandatory Activity:** Understanding and using sensitivity, specificity and predictive values)

**Description:** Students are asked to use the section's webinar material to attempt a series of tasks relating to calculating and interpreting validity measures of diagnostic tests. Students are expected to attempt to calculate sensitivity, specificity, positive predictive value and negative predictive value. Furthermore, in order to perform all tasks correctly, students are expected to display critical thinking as to what each measure means and its use in health surveillance.

## Additional Support Material

**Bibliography**


- Ghebrehewet S, Stewart AG, Baxter D, Shears P, Conrad D, Kliner M. ; Health Protection Principles and Practice, Oxford University Press (2016) Chapter 21.
    - *Permalink for e-book:*

http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,sso&db=nlebk&AN=1406327&site=eds-live&custid=s1098328&ebv=EB&ppid=pp_Cover

- Lewis G, Sheringham J, Bernal JL. Crayford T.; Mastering Public Health: A Postgraduate Guide to Examinations and Revalidation, (2nd ed.), CRC Press (2014), Chapter 2G.2.

    - *Permalink for e-book:*

http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,sso&db=nlebk&AN=1763530&site=eds-live&custid=s1098328&ebv=EB&ppid=pp_A


**Websites and Other relevant resources**

- The World Bank – Surveillance (http://web.worldbank.org/archive/website01213/WEB/0__CO-73.HTM)
- ECDC – Activities on Surveillance (https://www.ecdc.europa.eu/en/about-ecdc/what-we-do/ecdc-activities-surveillance)
- CDC - Integrated Disease Surveillance and Response (https://www.cdc.gov/globalhealth/healthprotection/idsr/index.html)


Demetriou CA, Achilleos S, Quattrocchi A, et al, on Behalf of the C-MOR Consortium. Impact of the COVID-19 pandemic on total, sex- and age-specific all-cause mortality in 20 countries worldwide during 2020: results from the C-MOR project, *International Journal of Epidemiology*, 2022. (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9452146/pdf/dyac170.pdf)


**Expected study time:** 13 hours

**Key words**

Health Protection Surveillance, Control of Infectious Conditions.

## Section 5 – Major features of an infection outbreak and methods of investigation and control

### Learning Objectives and Outcomes

**Objectives**

The specific section aims to cover and explain in detail infection outbreak investigation and the methodology involved.

**Expected Learning Outcomes**

After the completion of this section, the students are expected to:

9. Devise an outbreak investigation plan based on the principles of infection outbreak investigation.

### Teaching Material

**Recorded Lectures**

- Recorded lecture: Outbreak investigation

### Additional learning activities to complete

- Webinar Session (Outbreak investigation case study)

**Description:** Students are required to apply the knowledge gained from the section's material on an infection outbreak investigation case study. Students will be expected to approach an outbreak investigation with critical thinking as to choose the most appropriate steps, the type of information/samples needed, how the collected data will be used, and what are the most appropriate actions to take at the end of the investigation.

### Additional Support Material

**Bibliography**

• Ghebrehewet S, Stewart AG, Baxter D, Shears P, Conrad D, Kliner M. Health Protection Principles and Practice, Oxford University Press (2016) Chapter 20.

- *Permalink for e-book:*

http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,sso&db=nlebk&AN=1406327&site=eds-live&custid=s1098328&ebv=EB&ppid=pp_Cover

• Lewis G, Sheringham J, Bernal JL. Crayford T.; Mastering Public Health: A Postgraduate Guide to Examinations and Revalidation, (2nd ed.), CRC Press (2014), Chapter 2G.7.

- *Permalink for e-book:*

http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,sso&db=nlebk&AN=1763530&site=eds-live&custid=s1098328&ebv=EB&ppid=pp_A

**Websites and Other relevant resources**

- CDC - Field Epidemiology Training Program (https://www.cdc.gov/globalhealth/healthprotection/fetp/index.htm)
- CDC – Global Health Security (https://www.cdc.gov/globalhealth/healthprotection/ghs/index.html)
- CDC – Global Disease Detection (GDD) Program (https://www.cdc.gov/globalhealth/healthprotection/gdd/index.html)
- ECDC – Surveillance and outbreak tools (https://www.ecdc.europa.eu/en/tools/outbreak-surveillance-tools)
- ECDC – Guidelines for writing outbreak investigation reports (https://www.ecdc.europa.eu/sites/default/files/documents/Annex%2005_Guide%20for%20writing%20outbreak%20investigation%20reports_2019.pdf)

**Expected study time:** 13 hours

**Key words**

Infection Outbreak, Investigation, Control.

## Section 6 - Risk Management, emergency response and recovery

### Learning Objectives and Outcomes

**Objectives**

The specific section aims to cover in detail the processes and methodologies involved in risk management and reduction, as well as emergency response and recovery.

**Expected Learning Outcomes**

After the completion of this section, the students are expected to:

10. Apply all risk management steps (anticipation, assessment, prevention, preparation, response, recovery) during a major incident (e.g., infectious disease outbreak, chemical spills).
11. Relate and contrast the procedures and structures involved in emergency response and recovery and evaluate disaster risk assessment methods and reduction strategies.

### Teaching Material

**Recorded Lectures**

- Recorded PowerPoint presentation: Risk management & ERR

### Additional learning activities to complete

- Webinar Session (Response to zoonotic diseases outbreaks)

**Description:** Students are required to apply the knowledge gained from the section's material on emergency response. Students will be expected to approach a real life outbreak response with critical thinking.

### Additional Support Material

**Bibliography**

- Ghebrehewet S, Stewart AG, Baxter D, Shears P, Conrad D, Kliner M. ; Health Protection Principles and Practice, Oxford University Press (2016) Chapters 20,28.
    - *Permalink for e-book:*

http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,sso&db=nlebk&AN=1406327&site=eds-live&custid=s1098328&ebv=EB&ppid=pp_Cover

- Lewis G, Sheringham J, Bernal JL. Crayford T.; Mastering Public Health: A Postgraduate Guide to Examinations and Revalidation, (2nd ed.), CRC Press (2014), Chapter 2F.
    - *Permalink for e-book:*

http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,sso&db=nlebk&AN=1763530&site=eds-live&custid=s1098328&ebv=EB&ppid=pp_A

- Frumkin H.; Environmental Health: From Global to Local (3rd ed.), Wiley, (2016), Chapters 24, 27.
    - *Permalink for e-book:*

    https://ebookcentral.proquest.com/lib/nicosia/detail.action?docID=7104323

**Websites and Other relevant resources**

- US Environmental Protection Agency - Risk Assessment (https://www.epa.gov/risk/)
- ECDC – Preparedness, prevention, and control tools (https://www.ecdc.europa.eu/en/tools/country-resources)
- GOV.UK – Emergency response (https://www.gov.uk/topic/health-protection/emergency-response)
- UN – International Strategy for Disaster Reduction (https://www.unisdr.org/who-we-are/international-strategy-for-disaster-reduction)
- Quattrocchi A, Mamais I, Tsioutis C, et al. Extensive Testing and Public Health Interventions for the Control of COVID-19 in the Republic of Cyprus between March and May 2020. *Journal of clinical medicine*. 2020; *9*(11). (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7695263/pdf/jcm-09-03598.pdf)
- Achilleos S, Quattrocchi A, Gabel J, et al., on behalf of the C-MOR consortium. Excess all-cause mortality and COVID-19-related mortality: a temporal analysis in 22 countries, from January until August 2020. *International Journal of Epidemiology*. 2022; 51(1). (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8344815/pdf/dyab123.pdf)

- Kolokotroni O, Mosquera MC, Quattrocchi A, et al. Lifestyle habits of adults during the COVID-19 pandemic lockdown in Cyprus: evidence from a cross-sectional study. *BMC Public Health.*2021; 21(786). (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8064698/pdf/12889_2021_Article_10863.pdf)

**Online videos**

- BBC News 24 | Buncefield Oil Depot Fire (https://youtu.be/0FlJQWewjTc)

**Expected study time:** 13 hours

**Key words**

Risk Management, Risk Reduction, Emergency, Response, Recovery.

## Assessment

This course is assessed via a combination of attendance and participation in webinars and mandatory interactive activities (comprising 10% of total course marks), coursework (comprising 30% of total course marks) and a final comprehensive examination (comprising 60% of total course marks). In addition, the students will have the opportunity to undergo formative assessment, as a means of familiarising with the summative examination, as well as evaluating their performance in the course and receiving feedback from the course's tutor(s).

**Participation and engagement in webinars and mandatory interactive activities**

The Participation Grade will constitute 10% of the *total course marks* and will be awarded based on i) webinar attendace and participation and ii) participation in 2-3 learning activities. Participation includes active engagement in synchronous activitives, such as webinars, and online chats; and/or successful completion of mandatory in-course interactive activities, such as discussion fora, Q&A fora, short quizzes and problem-solving scenaria. The mandatory interactive activities that will be used for this course are clearly stated under each section of this study guide.

**Coursework**

The MPH-513 coursework comprises of the following 1 coursework component:

- 1 health protection assignment (*30% of total course marks*)

Detailed information and guidelines on the above coursework component will be uploaded on the course's Moodle page. All course work will be submitted via Moodle and marks will be communicated to students electronically. Dedicated Assignment Support Webinars will be offered prior to the submission of the assignment, with the purpose of answering student questions relevant to the content of the assignment, as well as the submission process.

**Final Examination**

The MPH-513 final examination is a comprehensive exam assessing the specific learning outcomes (LOs) from all courses. Since the exam is constructed explicitly based on the course's learning outcomes, students are strongly advised to follow an LO-driven approach while revising and preparing for the final examination. Students should be expected to be able to answer a given question on any LO covered during the course.

Final examinations will be completed online using electronic invigilation software.

**Formative quiz and feedback**

Students will have the opportunity to attempt a formative quiz, which although not contributing to the course's total marks (i.e. formative), is compulsory. The purpose of the formative quiz is for students to: (a) evaluate their performance and understanding/assimilation of the learning material up to the point of the quiz; (b) familiarize themselves with the level and format of the course's exams; and (c) receive valuable feedback from the course tutor(s) on their performance, as well as guidance on how to improve. The formative quiz will be conducted via Moodle.

**Self-assessment exercises**

**Short Answer Question (SAQ)**

The local authorities in a London district want to promote healthier eating habits in the community and more specifically they want to educate residents about the importance of daily consumption of fresh fruits and vegetables.

Describe **two** attributes (individual characteristics of residents) relevant to health education, which a field health worker working on this project should try to enhance and develop. Please provide your answer in the context of the above example.

**[4 marks]**

**SAQ Model Answer:**

1. One relevant attribute to work on is health literacy **[1 mark].** In this case, the field worker should aim at enhancing the capacity of residents to obtain, process, and understand basic information relevant to the health benefits resulting from daily consumption of fresh fruits and vegetables **[1 mark]**.

2. One relevant attribute to work on is health consciousness **[1 mark].** In this case, the field worker should aim at shaping the mentality of residents towards giving more emphasis to their health as regards lifestyle choices in general and more specifically consumption of fresh fruits and vegetables **[1 mark]**.

**Single Best Answer (SBA) question**

There have been multiple reports of gastroenteritis among guests at a hotel wedding reception in Mumbai, India. The local public health team are responsible for investigating this possible outbreak, with the goal of limiting spread of infection and preventing similar future incidents.

Once the team has confirmed that an outbreak has indeed occurred, what would be the immediate first step in the investigation?

A. Analytic epidemiological study
B. Case definition specification
C. Case finding
D. Descriptive epidemiological study
E. **Diagnosis verification**

**SBA notes on answer options**:

A. **Analytic epidemiological study**. Wrong answer. The descriptive epidemiology can be used to generate hypotheses about the potential cause(s) of the outbreak. Analytic studies can then be used to test these hypotheses. Findings will then be used to inform public health action for the control of the current outbreak and prevention of future incidents.

B. **Case definition specification**. Wrong answer. Deciding how to define a case (by time, place, person, and symptoms and/or lab results) can only occur once an outbreak has been confirmed and the diagnosis of existing cases have been verified.

C. **Case finding**. Wrong answer. After the case definition has been determined, known cases can be interviewed, with other cases identified through locating others who have also been exposed, reviewing routine surveillance data, notifications and laboratory results, and contacting other public health and healthcare teams.

D. **Descriptive epidemiological study.** Wrong answer. After cases have been found, data can be arranged by person/place/time to present the descriptive epidemiology of the outbreak. This can include an epidemic curve and line list of cases.

E. **Diagnosis verification**. Correct answer. After it has been confirmed that there has been an increase in the number of observed cases relative to expected numbers, and prior to further investigation, the diagnosis of existing cases must be verified through a review of medical and laboratory records, and further or repeat tests being performed.